

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all previous versions and listings of claims in this application.

Claim Listing:

Claims 1-9: (Cancelled).

10. (New) A refrigerator system using a hydrocarbon-based cooling medium, the system comprising:

a compressor, a condenser, and at least one evaporator operatively coupled together and containing the hydrocarbon-based cooling medium and a machine oil therein;

a cooling fan arranged to cool said compressor; and

a controller configured to:

operate said compressor at a first speed greater than an operational speed thereof while maintaining said cooling fan in an OFF state;

operate said compressor at the operational speed after said compressor has operated at the first speed for a predetermined period of time, wherein operating said compressor at the first speed for the predetermined period of time heats the hydrocarbon-based cooling medium at least to a temperature that reduces an amount of the hydrocarbon-based cooling medium dissolved in the machine oil at least to a level that reduces a sleeping phenomenon of the hydrocarbon-based cooling medium; and

thereafter, control an ON state of said cooling fan.

11. (New) The refrigerator system of claim 10, wherein said at least one evaporator comprises two evaporators arranged in parallel with each other, a first evaporator for a refrigerator compartment, and a second evaporator for a freezer compartment.

12. (New) The refrigerator system of claim 11, further comprising a selection valve controlled by the controller and arranged between the condenser and the first and second parallel evaporators.

13. (New) The refrigerator system of claim 10, wherein said hydrocarbon-based cooling medium comprises a combustible cooling medium.

14. (New) A refrigerator system using a hydrocarbon-based cooling medium, the system comprising:

a compressor, a condenser, and at least one evaporator operatively coupled together and containing the hydrocarbon-based cooling medium and a machine oil therein;

a cooling fan arranged to cool said compressor; and

a controller configured to:

operate said compressor at an operational speed;

control an ON/OFF state of said cooling fan;

evaluate an air temperature of an environment in which the refrigerator system is arranged and, responsive to a determination that the air temperature is less than a first temperature, stop the cooling fan; and

responsive to a determination that the air temperature is equal to or greater than the first temperature and that a temperature difference between an inlet and an outlet of said at least one evaporator is less than a predetermined value, start said cooling fan,

wherein said control of the ON/OFF state of said cooling fan operates to heat the hydrocarbon-based cooling medium at least to a temperature that reduces an amount of the hydrocarbon-based cooling medium dissolved in the machine oil at least to a level that reduces a sleeping phenomenon of the hydrocarbon-based cooling medium.

15. (New) The refrigerator system of claim 14, wherein said controller is further configured to cancel a forced OFF state of said cooling fan in response to a determination that said temperature difference is less than or equal to a second predetermined value.

16. (New) The refrigerator system of claim 14, wherein said at least one evaporator comprises two evaporators arranged in parallel with each other, a first evaporator for a refrigerator compartment, and a second evaporator for a freezer compartment.

17. (New) The refrigerator system of claim 16, further comprising a selection valve controlled by the controller and arranged between the condenser and the first and second parallel evaporators.

18. (New) The refrigerator system of claim 14, wherein said hydrocarbon-based cooling medium comprises a combustible cooling medium.